

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2005/024212

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl. C07D209/88 (2006.01), C09K11/06 (2006.01), H01L51/50 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl. C07D 209/88, C09K 11/06, H01L 51/50

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Published examined utility model applications of Japan 1922-1996
Published unexamined utility model applications of Japan 1971-2006
Registered utility model specifications of Japan 1996-2006
Published registered utility model applications of Japan 1994-2006

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CAOLD (STN), CAPLUS (STN), REGISTRY (STN)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	WO 2003/048268 A1 (TOYO INK MFG CO LTD) 2003.06.12, & KR 2004028929 A & US 2004/151944 A1 & EP 1452574 A1 & CN 1526002 A & JP 2003-549450 A (see page 12 compound A24)	1-6, 8-17, 20-24 7, 18, 19
X Y	JP 2003-129043 A (TOYO INK MFG CO LTD) 2003.05.08, (Family: none) (see page 19 compound 45-48)	1-6, 8-17, 20-24 7, 18, 19
X Y	JP 09-134020 A (CANON KK) 1997.05.20, & EP 762219 A1 & US 5756248 A & EP 762219 B1 & DE 69611711 E & JP 3313980 B2 (see page 4-7 compound No.1-33)	1-6, 8-17, 20-24 7, 18, 19

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

13.02.2006

Date of mailing of the international search report

21.02.2006

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	LIUA, D., Enhancement in brightness and efficiency of organic electroluminescent device using novel	1,3,5,6,9-11,13,20-24
Y	N,N-di(9-ethylcarbaz-3-yl)-3-methylaniline as hole injecting and transporting material, Synthetic Metals (2004.10.14), Vol.146, No.1, pp.85-89 (see page 86 DECMA)	2,4,7,8,12,14-19
X	BALIONYTE, A., Synthesis and properties of polymers containing aromatic amino groups in the main chain and their	1,3,5,6,9-11,13,20-24
Y	glass-forming model compounds, European Polymer Journal (2004/08), Vol.40, No.8, pp.1645-1650 (see page 1647 compound No.5)	2,4,7,8,12,14-19
X	BALIONYTE, A., Potential hole-transport materials prepared by Ullmann coupling, Environmental and Chemical	1,3,5,6,9-11,13,20-24
Y	Physics (2002), Vol.24, No.1, pp.30-34 (see page 31 compound No.6)	2,4,7,8,12,14-19
X	JUSTIN, T. K. R., Light-Emitting Carbazole Derivatives: Potential Electroluminescent Materials, Journal of the	1,2,4,5,7,9,10,12,13,16,17,20-24
Y	American Chemical Society (2001), Vol.123, No.38, pp.9404-9411 (see page 9406 compound No.16)	3,6,8,11,14,15,18,19
Y	JP 2004-288380 A (KONICA CORP) 2004.10.14, (Family: none) (see page 10 compound No.30)	1-24
Y	JP 10-265773 A (TOYO INK MFG CO LTD) 1998.10.06, (Family: none) (see page 36 compound No.85)	1-24
Y	JP 62-280850 A (CANON KK) 1987.12.05, (Family: none) (see page 3 compound No.13)	1-24
Y	JUSTIN, T. K. R., Cyanocarbazole Derivatives for High-Performance Electroluminescent Devices, Adv. Funct. Mater. (2004/04), VOL.14, NO.4, pp.387-392 (see page 387 compound No.4)	1-24

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E, X	JP 2006-028176 A (SAMSUNG SDI CO LTD) 2006.02.02, (Family: none) (see page 11 compound No.1, No.5, page 13 compound No.17, No.21)	1-24
P, X P, Y	JP 2005-290000 A (SAMSUNG SDI CO LTD) 2005.10.20, & US 2005/221124 A1 (see page 5 compound No.8)	1-6, 8-17, 20-24 7, 18, 19